

REMARKS

In response to the Examiner's Final Office Action, Paper No./Mail Date 1127, dated December 1, 2005, Applicant has carefully studied the references cited by the Examiner and the Examiner's comments relative thereto.

Claims 1, 12, 17, and 22-25 have been amended.

Claim 11 has been cancelled.

Claims 1-10 and 12-25 remain in the application for consideration by the Examiner.

No new matter has been added.

Reconsideration of the application, as amended, is respectfully requested.

35 U.S.C. § 112

The Examiner rejected Claims 8 and 9 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

In the course of the Appeal (Appeal 2007-0404), the Examiner graciously withdrew the rejections of Claims 8 and 9 stating in the Examiner's Answer, "Rejections of Claim 8 and 9... have been overcome in view of the argument I set forth at page 4 of the Appeal Brief."

The argument I set forth of the Appeal Brief stated in part:

Claims 8 and 9 recite that the first and second layers of plastic are either the same or different. This parrots the language of Paragraph 0008, wherein it is disclosed that the first and second layers may be the same or different in composition, thickness, orientation, etc. Paragraph 0008 further describes plastics that are different, from which the first and second layers may be made. ...

Appellant submits that the Specification specifically discloses how the first and second layers can be the same or different, and that the reader is fully appraised of the scope of the Claims, when read by one ordinarily skilled in the art in light of the prior art. Accordingly, Appellant respectfully submits that Claims 8 and 9 fully comply with the requirements of 35 USC 112, second paragraph.

Accordingly, the rejection of Claims 8 and 9 are now moot.

35 U.S.C. § 102(b)

The Examiner rejected Claims 1-2, 5, 8-13, 16-19 and 22 as being anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 5,149,579 to Park et al. for POLYPROPYLENE FOAM SHEETS. More specifically, the Examiner stated, “Park uses carbon dioxide as a blowing agent to form the foam... therefore, it is not seen that the foam cells could not have contained carbon dioxide”.

Claim 1 of the application, as amended, reads as follows:

A container, comprising:
a first layer of plastic; and
a second layer of plastic contacting said first layer, said second layer of plastic formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen.

Claim 22 of application reads as follows:

A multilayer perform, comprising:
a first layer of plastic; and
a second layer of plastic contacting said first layer, said second layer of plastic formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen.

Claims 1 and 22 recite a layer of plastic formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen. The carbon dioxide or nitrogen remains in the cells of the foam. Park discloses the use carbon dioxide as a blowing agent. However, the “blowing agent is used primarily for controlling the density of the foam” [column 10, lines 33-34]. More importantly, Park discloses that the blowing agent “comes out of solution creating bubbles when the pressure and temperature decrease” [column 10, lines 34-37]. Furthermore, Park discloses that the foam sheet is “aged for a period of time to allow for diffusion of the blowing agent and air through the cell walls” [column 8, lines 21-25]. Accordingly, because the blowing agent and air diffuses from the cell walls, the cells are not substantially filled with the blowing agent as required by Claims 1 and 22. Thus, the foam sheet according to Park uses a carbon dioxide foaming agent for controlling the density of the foam only.

Park does not disclose a layer of plastic “wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen”. Accordingly, Park does not anticipate Applicant’s invention. As a result, the Park reference cannot properly serve as a basis for rejection of independent Claims 1 and 22 or Claims 2, 5, 8-13, 16-19, which depend therefrom, under 35 U.S.C. 102(b) and are patentable.

35 U.S.C. § 102(e)

The Examiner also rejected Claims 1-11, 22, and 23 as being anticipated under 35 U.S.C. § 102(e) by U.S. Patent No. 6,485,819 to Hayes et al. The Examiner stated, “the foam cells would have contained carbon dioxide” because “the layer of copolyester is foamed by using carbon dioxide as a blowing agent”.

Claims 1 and 22 of the application may be read above.

Claim 23 of the application reads as follows:

A container, comprising:
a first layer of polyethylene terephthalate; and
a second layer of plastic contacting said first layer, said second layer of plastic formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen.

Claims 1, 22, and 23 recite a layer of plastic formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen. The carbon dioxide or nitrogen remains in the cells of the foam. A careful examination of the Hayes patent discloses polyesters foamed by a variety of methods. The Examiner stated, “the foam cells would have contained carbon dioxide” because “the layer of copolyester is foamed by using carbon dioxide as a blowing agent”. However, Hayes discloses that in selecting the method of foaming the polyesters a desired foaming action is sought [column 15, lines 60-61].

Hayes discloses injecting an inert gas such as carbon dioxide into the melt during extrusion or molding process [column 15, line 35 et seq.]. It is clear from Hayes that the foaming method is chosen only for a “desired foaming action in the polymeric melt” [column 15, lines 60-63] and nothing more. Hayes does not disclose a “foam plastic layer wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen”, as found in the present application.

Hayes does not disclose a layer of plastic “wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen”. Accordingly, Hayes does not anticipate Appellant’s invention. As a result, the Hayes reference cannot properly serve as a basis for rejection of independent Claims 1, 22, and 23 or Claims which depend therefrom under 35 U.S.C. 102(e).

35 U.S.C. § 103(a)

The Examiner rejected Claims 3, 4, 6, 7, 14, 15, 20, 21, and 23-25 as being obvious over Park further in view of Hayes under 35 U.S.C. § 103(a). The Examiner also rejected Claims 12-17 and 24 as being obvious over Hayes further in view of Park; Claims 18-21 and 25 as being obvious over Hayes further in view of U.S. Patent No. 5,149,579 to Haase et al.; and Claims 1-11, 22, and 23 as being obvious over U.S. Patent No. 5,919,547 to Kocher et al. further in view of Hayes.

Applicant respectfully asserts that the Examiner has failed to establish a prima facie case of obviousness in regards to Claims 1 and 22-25 because the cited references do not contain any motivation or suggestion to combine references. More importantly, even if the references are combined, the combination of references does not produce each and every limitation of independent Claims 1 and 22-25. All of the independent claims recite a plastic layer “formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen.” Indeed, none of the cited references require the foam cells to be substantially filled with carbon dioxide or nitrogen. As a result, no combination of references can properly serve as a basis for rejection of independent Claims 1, 22-25 or Claims 2-21 dependent therefrom under 35 U.S.C. 103(a).

Park discloses a container having a polypropylene foam layer, a functional layer, and a polypropylene foam layer [column 8, lines 30-60]. Park does not, however, disclose a foam layer made from polyethylene terephthalate for improved biodegradation rate and thermal properties. The Examiner even notes this, stating “Park does not teach the foam layer made from a polyethylene terephthalate”. The Examiner asserts that Hayes cures the defect of Park. The Examiner states, “Hayes...teaches... a foam layer made from a copolyester that exhibit (sic) an improved rate of biodegradation more amendable to solid waste disposal”. Indeed, Hayes does disclose laminates and multilayer films with improved characteristics. However, Hayes does not disclose the combination of the copolyester film with another material with similarly desired characteristics amenable to solid waste disposal. In fact, Hayes merely

discloses laminates and “film... combined with other polymeric materials... with improved characteristics, such as water vapor resistance” [column 9, lines 61-64; column 12, lines 38-42]. The addition of the film or laminate with another polymeric material could significantly alter the degradation rate of the container thereby changing the characteristics to be less amenable to solid waste disposal. Indeed, a thorough examination of Hayes shows it is completely devoid of any disclosure regarding multilayer objects comprised of identical materials or materials with similar biodegradation characteristics.

Accordingly, one skilled in the art would have no motivation to combine the multilayer container of Park with the laminate or film having the increased biodegradation rate and thermal principles of Hayes because Hayes does not disclose multilayer objects comprised of identical materials or materials with similar biodegradation characteristics, in any manner.

Even if the Park and Hayes references are combined, the combination does not produce each and every limitation of independent Claims 23-25, which recite a layer of plastic formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen. As discussed above, Park discloses that the blowing agent “comes out of solution creating bubbles when the pressure and temperature decrease”. Hayes merely discloses a blowing agent utilized merely for a “desired foaming action in the polymeric melt” and is completely devoid of any teaching or suggestion of multilayer objects comprised of identical materials or materials with similar biodegradation characteristics. Therefore, the combination of references fails to teach or suggest each and every limitation of independent Claims 23-25. Accordingly, even if Park and Hayes are combined, each and every limitation of Appellant’s invention is not represented. As a result, this combination of references cannot properly serve as a basis for rejection of independent Claims 23-25 nor any of the dependent claims under 35 U.S.C. § 103(a).

The Examiner has also failed to establish a prima facie case for independent Claim 24 under 35 U.S.C. § 103(a) as being unpatentably obvious over Hayes in further view of Park. Independent Claim 24, like independent Claims 1, 22, 23, and 25 recites a plastic layer “formed as a foam wherein the foam cells contain carbon dioxide”. As discussed above, neither Park nor Hayes requires the foam cells to be substantially filled with one of carbon dioxide and nitrogen. Therefore, even if there were a suggestion to combine the references, the combination does not produce the limitation that the foam cells be substantially filled with one of carbon dioxide and nitrogen.

The Examiner has also failed to establish a prima facie case for independent Claim 25 under 35 U.S.C. § 103(a) as being unpatentably obvious over Hayes in further view of Hasse. Claim 25, like independent Claims 1 and 22-24 recites a plastic layer “formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen.” As discussed above, Hayes does not require the foam cells to be substantially filled with one of carbon dioxide and nitrogen. Hasse is completely devoid of mention of blowing agents, a foaming process, polyethylene terephthalate, foam cells containing carbon dioxide, or any mention of carbon dioxide whatsoever. Therefore, even if there was a suggestion to combine the references, the combination does not produce the limitation that the foam cells be substantially filled with one of carbon dioxide and nitrogen.

Lastly, the Examiner has failed to establish a prima facie case for independent Claims 1, 22, and 23 under 35 U.S.C. § 103(a) as being unpatentably obvious over Kocher in further view of Hayes. Claims 1, 22, and 23, like independent Claims 24-25 recite a plastic layer “formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen.” As discussed above, Hayes does not require the foam cells to contain carbon dioxide. As the Examiner pointed out, Kocher similarly “does not teach the use of carbon dioxide to form the foamed support member” nor does Kocher disclose that the foam layer contains carbon dioxide or nitrogen. Therefore, even if there were a suggestion to combine the references, the combination does not produce the limitation that the foam cells contain carbon dioxide.

Accordingly, withdrawal of the rejections under 35 U.S.C. §103(a) is respectfully requested.

The other references cited by the Examiner, but not applied, have been studied and are not considered to be any more pertinent than the references relied upon by the Examiner.

It is submitted that the claims distinctly define the Applicant’s invention and distinguish the same from the prior art. Reconsideration of the application, as amended, is respectfully requested. A formal Notice of Allowance is solicited.

While the Applicant’s attorney has made a sincere effort to properly define Applicant’s invention and to distinguish the same from the prior art, should the Examiner deem that other language would be more appropriate, it is requested that a telephone interview be had with the Applicant’s attorney in a sincere effort to expedite the prosecution of the application.